

WHAT IS CLAIMED IS:

1. A method for producing a complex metal oxide powder, comprising:

heating at least two kinds of metal salts, or a complex metal salt comprising at least two kinds of metals, to a temperature at which transition to a complex metal oxide occurs, and calcining the metal salts or the complex metal salt in the presence of a hydrogen halide gas.

2. The method according to claim 1, wherein a concentration of the hydrogen halide gas after heating is from about 0.1 vol% to about 10 vol%.

3. The method according to claim 1, wherein at least one metal salt is a metal halide salt, and at least one metal salt is a non metal halide salt.

4. The method according to claim 1, wherein the complex metal salt comprises at least two kinds of metal atoms, a halogen atom, and a non-halogen atom.

5. The method according to claim 3, wherein the metal halide salt and the non metal halide salt are made of a same metal.

6. The method according to claim 5, wherein the metal halide salt and the non metal halide salt made of the same metal are at a molar ratio in a range of 99.9:0.1 to 90:10.

7. The method according to claim 1, wherein a temperature of the calcination is from about 500°C to about 1000°C.

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8. The method according to claim 1, wherein the complex metal oxide powder is a perovskite-structure oxide powder.

9. The method according to claim 8, wherein the perovskite-structure oxide powder comprises a titanate.

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